

16. *ASPLENIUM RUTA-MURARIA*, Linnaeus. Fronds deltoid, with wedge-shaped divisions, Limestone cliffs, N. H., Vt., Mass., Ct.

17. *CAMPTOSORUS RHIZOPHYLLUS*, Link. Walking Leaf. Fronds undivided, with prolonged proliferous tips; abnormal forms not infrequent. Limestone cliffs, but also on other formations. Me., N. H., Vt., Mass., R. I., Ct.

This completes the evergreen true ferns of New England, but in old meadow lands, about hummocks and shrubbery, on springy hill-sides, or in low woodlands, when free from snow, in many places may be found the ternate fleshy sterile forms of *Botrychium ternatum*. So also may be found the handsome furrowed stems of the scouring rush (*Equisetum hyemale* L.) and several forms of club moss (*Lycopodium*), and *Selaginella*.

NOTE. In the preparation of this matter I have been greatly indebted to Miss Slosson for many valuable observations which it gives me pleasure to acknowledge here.

MEDFORD, MASSACHUSETTS.

OUR CHOKEBERRIES.

W. H. BLANCHARD.

THE compilers of the Flora of Vermont could find no authenticated specimens of the Red Chokeberry, *Pyrus arbutifolia*, L., and so left it out, though the Black Chokeberry was given as common. On May 26, 1900, I found the Red Chokeberry on Rocky Hill in Westminster, Vermont, about two miles from the Connecticut River. While I felt sure I had found the typical plant and no variety or "form," I sent it to Pres. Brainerd and Mr. Fernald to have it compared with authenticated specimens. Both pronounced it a normal plant of the type form. So Vermont botanists can add another plant to our growing list.

Some of my observations on both of our Chokeberries are here given. They seem to indicate that these plants are variable in several respects and may interest botanists. The plants have an abundance of Latin names, some of them indicating that the color of the fruit has been considered to be practically uniform.

The Illustrated Flora describes the Red Chokeberry as from five

to twelve feet high; lower surfaces of the leaves, calyx and pedicels tomentose; fruit globose or depressed, bright red, two or three lines in diameter; growing in swamps and wet woods. Gray gives it as common from Nova Scotia to Florida. It grows at my Westminster station on dry, rocky knolls scattered over a large area of poor, broken woodland, but not in the swampy or moist places. The fruit was not fairly ripe and red till the middle of September, and later it turned black. It was much smaller than that of the Black Chokeberry, which grew here also, and six weeks later. It will be noticed that in Vermont it is not common and does not in this case grow in swamps and wet places.

I have watched it at a station in Walpole, New Hampshire, also. Here it grew in a moist place, but the fruit had only a mere tinge of red and that on only a small part of the berries. At both these stations the fruit was globose-depressed like an apple. But on September 21, 1901, I found a Walpole station on Drewsville Plain so often mentioned in Mr. Fernald's article in RHODORA, iii. 232. It was near "Aunt Philae's" pond, and the plants were from six to ten feet high, but the fruit was as large as that of the Black Chokeberry, elongated-globose like it and as black, plump and shining. I sent specimens to Mr. Fernald and he thought we must call them *P. arbutifolia*. At all three stations the woolly condition of the underside of the leaves, of the calyx and the pedicels was the same and continued throughout the season.

The Black Chokeberry is described in the Illustrated Flora as having the underside of the leaves, pedicels and calyx glabrous; fruit globose or oval, nearly black or purplish black, three or four lines in diameter; growing in swamps and low woods or sometimes in drier situations. Gray gives it as having black fruit, and Wood as growing in swamps, and from two to five feet high. I have seldom seen it in a swamp or wet place. It is often five or six feet high though generally it is shorter. It often grows with Huckleberries and is generally supposed or said to be poisonous. Some of its common names are expressive if not polite. I have not found it astringent as the floras give it, but flat and tasteless.

I found it very abundant in Stratton, Vt., on the historic ground where Daniel Webster addressed the famous gathering of the Whigs of Southern Vermont in 1840. Many specimens were bright-red but otherwise normal, and none grew in damp places.

On the coast of Maine, especially on the plains of Kennebunkport where boreal plants are so common, I found large areas of it mostly about a foot high. On August 8, 1901, I saw near the Town House large patches which had red and purple fruit. In a few days this had darkened a great deal and was wrinkled and dull, while the normal fruit was plump and shining. In all cases the leaves and pedicels were glabrous.

It is evident that these plants need much further study and I should be pleased to hear from others in regard to them.

WESTMINSTER, VERMONT.

NOTES ON LYCOPODIUM.

R. G. LEAVITT.

LYCOPODIUM CLAVATUM, VAR. MONOSTACHYON ON MT. MONADNOCK. — In driving through elevated pasture land on the outlying southern slopes of Mt. Monadnock, New Hampshire, in November, 1901, I was attracted by a growth of *Lycopodium clavatum* covering a plot of dry open ground 12 or 15 feet in diameter, and noticeable even at some little distance for its unusual appearance. The plant differed from ordinary *clavatum* in having an exceedingly stiff habit, the secondary shoots being shorter and more erect, the lateral segments of these shoots less divergent, and the leaves far less spreading than in the type. The later leaves of each season were closely appressed, the latest particularly so, and thus the annual growths of the branchlets being plainly marked off the plant had a conspicuously articulated appearance. I found in all 70 peduncles bearing in each case a single strobile.

Analogous forms of *L. complanatum* and *L. obscurum* are to be seen where these species occur in open, dry situations. In *complanatum* we get short, sparingly branched, more or less erect segments, and reduction in the number of strobiles to each peduncle; in the *obscurum*, similar effects on the general habit, with certain resultant changes in the plan of the lateral segments. These variations, which are often very pronounced, are due to physiological causes. On the contrary the characters distinguishing the form of *L. clavatum* in question seem to be constitutional. The specimens taken agree with plants from further north, of the variety *monostachyon*. This